

Appln No. 10/753420
Amdt. Dated: August 30, 2006
Response to Office Action of July 14, 2006

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A system for printing a three dimensional product, the system including:

~~at least one a plurality of printheads for printing material layer-by-layer to create a three-dimensional printed product; and~~
an object incorporation device for incorporating at least one inorganic semiconductor into the three-dimensional product whilst it is being printed whilst the at least one printhead prints the product; and
wherein — at least one of said printheads is configured for printing electrical connections to the at least one inorganic semiconductor incorporated into the product.
2. (Cancelled)
3. (Original) The system of claim 1 wherein the electrical connections are printed by a drop on demand printing system.
4. (Original) The system of claim 1 wherein the connections are printed with molten metal.
5. (Currently amended) The system of claim 1, wherein the printheads are configured to being a three-dimensional product creation system that prints products layer-by-layer, the system printing at least part of each of multiple layers simultaneously.
6. (Cancelled)
7. (Original) A system as claimed in claim 1 wherein each layer is defined by a plurality of voxels arranged in a regular array and wherein the voxels of each layer are printed so as to be offset by half a voxel relative to the voxels of adjacent layers in a first direction, a second direction perpendicular to the first direction or both the first and second directions.

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8. (Original) A system as claimed in claim 1 wherein the printheads are configured to enable printing of at least two different materials in at least one layer.
9. (Original) A system as claimed in claim 1 wherein the printheads are configured such that at least one of the layers may be printed with a first set of materials and at least one other of the layers may be printed with a second set of materials, and
wherein the first and second sets are not the same.
10. (Original) A system as claimed in claim 1 wherein the system is configured to enable at least one first printhead that is initially configured to print at least part of a first layer to be dynamically reconfigured to print at least part of a second layer.
11. (Original) A system as claimed in claim 1 wherein the system is configured to enable at least one first printhead that is initially configured to print at least part of a first layer to be dynamically reconfigured to print at least part of a second layer, and
wherein if at least one printhead initially configured to print the second layer fails whilst printing said second layer, said at least one first printhead is dynamically reconfigured to complete the printing of at least part of said second layer.
12. (Original) A system as claimed in claim 1 wherein the system includes semiconductor memory and
wherein data defining at least one layer is stored in the semiconductor memory.
13. (Original) A system as claimed in claim 1, the system executes a process, the system including a plurality of subsystems, each of which performs a stage of the process,
each of the subsystems configured to perform one of a first subset of N_1 of the stages, where N is greater than 1 and to change the stage of the subset being performed on receipt of a change instruction;
wherein, in the event that one of the subsystems fails, at least one of the remaining subsystems synchronously changes to performing the respective stage of the failed subsystem without requiring transfer of data relating the respective stage to the said at least one remaining subsystems, and
when a subsystem changes to performing a different stage, the system reconfigures the subsystem to be capable of performing a second subset N_2 of the stages where N_1

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and N₂ have the same number of stages.

14. (Original) A system as claimed in claim 1 including a least two printheads, a first one of the printheads printing a first material and a second one of the printheads printing a second material, the first material being cured by a first method and the second material being cured by a second method and wherein the first and second methods are different.

15. - 16. (Cancelled)

17. (Previously presented) A system as claimed in claim 1 wherein the object incorporation device is for inserting the at least one inorganic semiconductor into at least one cavity created during the printing process

18. (Original) A system as claimed in claim 1 including a least two printheads, wherein a first printhead is actively maintained at a first temperature and a second printhead is actively maintained at a second temperature.